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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	09/834,573	BAUM ET AL.
	Examiner	**Art Unit**	
	Robert C. Scheibel	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 January 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21, 25-32, 35-37, 39-42, & 44-46</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-14,19-21,25-28,31,32,35-37,39-42 and 44-46</u> is/are rejected.

7)☐ Claim(s) <u>15-18,29 and 30</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20060809</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20060914

DETAILED ACTION

- Examiner acknowledges Applicant's Amendment filed 1/20/2006 and the Information Disclosure Statement (IDS) filed 8/9/2006.

- Claim 46 is newly added in Applicant's Amendment.

- Claims 1-21, 25-32, 35-37, 39-42, and 44-46 are currently pending.

Response to Arguments

1.   Applicant's arguments, see page 10, filed 1/20/2006, with respect to the objection to Figure 36, have been fully considered and are persuasive. The objection to Figure 36 has been withdrawn.

2.   Applicant's arguments, see pages 11-13, filed 1/20/2006, with respect to the rejection of claims 1, 2, 4, 8-10, 19, 21, 25, 26, and 39 under 35 U.S.C. 102(e) have been considered but are moot in view of the new grounds of rejection.

Information Disclosure Statement

3.   The information disclosure statement filed 8/9/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. A copy of the non-patent literature publication "O'Hanlon Piers Notes..." was not submitted; this publication has therefore not been considered.

Double Patenting

4.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

         A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

         Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5.   Claims **1 and 39** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim **1** of U.S. Patent No. 6,771,673 in view of U.S. Patent 6,640,251 to Wiget et al.

         Regarding claims **1 and 39**, steps a, b, and c of claim 1 of the present application are merely broader recitations of steps a, b, and c of claim 1 of U.S. Patent No. 6,771,673. For example, the "context information" of the present application is merely a broader description of the "unique bit string" of U.S. Patent No. 6,771,673. Substep i of step d of claim 1 of the present application is disclosed in substep i of step d of U.S. Patent No. 6,771,673; the removing of at least a part of layer 2 address information of the present application is necessarily done in the step of replacing at least part of a layer 2 header of U.S. Patent No. 6,771,673.

U.S. Patent No. 6,771,673 does not disclose expressly the limitations of adding the

customer context information to the resulting data to generate modified data. However, Wiget

discloses these limitations in lines 34-40 of column 4 and lines 61-65 of column 5. In this case,

the context information includes the tunnel source IP address. The VPN ID and CPE ID are the

resulting data that is generated when the source MAC address is removed. The context

information (tunnel source IP address) and the resulting data (VPN ID and CPE ID) are

combined (added) to create modified data (the calculated MAC address of line 62 of column 5.

U.S. Patent No. 6,771,673 and Wiget are analogous art because they are from the same field of

endeavor of virtual LANs. At the time of the invention it would have been obvious to a person

of ordinary skill in the art to modify Dobbins to create the modified data (calculated MAC

address) of Wiget. The motivation for doing so would have been to provide a scalable and

server-less solution to Virtual Private LAN Segments by using the ME-ARP of Wiget as

suggested in lines 41-43 of column 1. Therefore, it would have been obvious to combine Wiget

with U.S. Patent No. 6,771,673 for the benefit of providing a scalable and server-less solution to

VPLS to obtain the invention as specified in claims 1 and 39.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8.   Claims **1-5, 8-14, 19-20, 27-28, 39-42, and 44-46** are rejected under 35 U.S.C. 103(a) as

being unpatentable over U.S. Patent 6,147,995 to Dobbins, et at in view of U.S. Patent 6,640,251

to Wiget et al.

Regarding claims **1 and 39**, Dobbins discloses a method for processing data, received

from a first customer device (one of the end systems labeled 20A-20L in Figure 5, for example)

via access facilities, addressed to a second customer device (one of the end systems labeled 20A-

20L in Figure 5, for example), the method comprising: a) terminating, with a physical interface,

a link of the access facilities (the physical link terminated by ports 1-3 in figure 5, for example);

b) associating at least one logical interface with the physical interface (the VLAN(s) with which

the ports are associated – see Figure 5); c) associating customer context information with the

logical interface (the port number represents part of the context information (which is at least the

connection identifier of lines 1-4 of column 2) and is associated with a logical interface via the

VLAN/Access Port table of Figure 7); and d) upon receiving the data, i) removing at least a part

of layer 2 address information from the data to generate resulting data (see lines 12-15 of column

5).

Dobbins does not disclose expressly the limitations of adding the customer context

information to the resulting data to generate modified data. However, Wiget discloses these

limitations in lines 34-40 of column 4 and lines 61-65 of column 5. In this case, the context

information includes the tunnel source IP address. The VPN ID and CPE ID are the resulting

data that is generated when the source MAC address is removed. The context information

(tunnel source IP address) and the resulting data (VPN ID and CPE ID) are combined (added) to

create modified data (the calculated MAC address of line 62 of column 5. Dobbins and Wiget

are analogous art because they are from the same field of endeavor of virtual LANs. At the time

of the invention it would have been obvious to a person of ordinary skill in the art to modify

Dobbins to create the modified data (calculated MAC address) of Wiget. The motivation for

doing so would have been to provide a scalable and server-less solution to Virtual Private LAN

Segments by using the ME-ARP of Wiget as suggested in lines 41-43 of column 1. Therefore, it

would have been obvious to combine Wiget with Dobbins for the benefit of providing a scalable

and server-less solution to VPLS to obtain the invention as specified in claims 1 and 39.

Regarding claim **27**, Dobbins discloses a method for maintaining carrier data tables, the

method comprising: a) terminating, with a physical interface, a link of the access facilities (the

physical link terminated by ports 1-3 in figure 5, for example); b) associating at least one logical

interface with the physical interface (the VLAN(s) with which the ports are associated – see

Figure 5); c) associating customer context information with the logical interface (the port

number represents part of the context information (which is at least the connection identifier of

lines 1-4 of column 2) and is associated with a logical interface via the VLAN/Access Port table

of Figure 7).

Dobbins does not disclose expressly the limitation of upon receiving data from a

customer device, adding the customer context information to the resulting data to generate

modified data. Dobbins also does not disclose expressly the limitations of if the data is an

address advertisement, forwarding the modified data to an edge information update facility or if

a table update is received from the edge information update facility, updating a carrier

information table. However, Wiget discloses the limitation of upon receiving data from a

customer device, adding the customer context information to the resulting data to generate

modified data in lines 34-40 of column 4 and lines 61-65 of column 5. In this case, the context

information includes the tunnel source IP address. The VPN ID and CPE ID are the resulting

data that is generated when the source MAC address is removed. The context information

(tunnel source IP address) and the resulting data (VPN ID and CPE ID) are combined (added) to

create modified data (the calculated MAC address of line 62 of column 5. Dobbins further

discloses the limitation that if the data received from the customer device is an address

advertisement (ARP), then forwarding the modified data to an edge information update facility

(in the passage from line 57 of column 5 through line 16 of column 6; the end station B is the

edge information update facility in that is updates it's ARP table). Additionally, Dobbins also

discloses if a table update is received from the edge information update facility, then updating a

carrier information table (this is also disclosed in this passage from line 57 of column 5 through

line 16 of column 6; the ARP reply is the table update and the CPE A and CPE B devices, which

are the edge routers, update their tables accordingly). Dobbins and Wiget are analogous art

because they are from the same field of endeavor of virtual LANs. At the time of the invention it

would have been obvious to a person of ordinary skill in the art to modify Dobbins to create the

modified data (calculated MAC address) of Wiget and to update the ARP tables of the affected

devices according to the method outlined in Wiget. The motivation for doing so would have

been to provide a scalable and server-less solution to Virtual Private LAN Segments by using the

ME-ARP of Wiget as suggested in lines 41-43 of column 1. Therefore, it would have been

obvious to combine Wiget with Dobbins for the benefit of providing a scalable and server-less

solution to VPLS to obtain the invention as specified in claim 27.

Regarding claim **40**, Dobbins discloses a transport network (elements 15 of figure 5), and

an aggregation unit (one of the SFPSs 11-14 of figure 5) for processing data, received from a

first customer device (one of the end systems labeled 20A-20L in Figure 5, for example) via

access facilities, addressed to a second customer device (another one of the end systems labeled

20A-20L in Figure 5, for example), the aggregation unit including (a) a physical interface for

terminating a link of the access facilities (the physical link terminated by ports 1-3 in figure 5,

for example), (b) at least one logical interface associated with the physical interface (the

VLAN(s) with which the ports are associated – see Figure 5), (c) a storage device for storing

customer context information associated with the logical interface (the port number represents

part of the context information (which is at least the connection identifier of lines 1-4 of column

2) and is associated with a logical interface via the VLAN/Access Port table of Figure 7), and (e)

means for aggregating the modified data at the logical interface with other modified data at other

logical interfaces, for trunking on a shared network-facing, communications link (shown in

figure 5, for example, where packets from the same VLAN are aggregated together at the

respective SFPSs; for example, the packets from VLAN 20 arrive on ports 2 and 3 at SFPS 11

and are aggregated and forwarded to SFPS 14), an access router (one of the SFPSs 11-14 of

figure 5), the access router comprising: a) a port for receiving the modified data from the shared,

network-facing, communications link (lines 12-15 of column 5); and b) means to forward the

modified data, across the transport network, to a second edge device associated with the second

customer device (lines 51-54 of column 5).

Dobbins does not disclose expressly (d) means for, upon receiving the data, adding the

customer context information to the data to generate modified data or the means for

encapsulating the modified data with carrier information. Wiget discloses the limitation of upon

receiving the data, adding the customer context information to the data to generate modified data

in lines 34-40 of column 4 and lines 61-65 of column 5. In this case, the context information

includes the tunnel source IP address. The VPN ID and CPE ID are the resulting data that is

generated when the source MAC address is removed. The context information (tunnel source IP

address) and the resulting data (VPN ID and CPE ID) are combined (added) to create modified

data (the calculated MAC address of line 62 of column 5. Wiget further discloses the limitation

of encapsulating the modified data with carrier information in lines 57-67 of column 5 which

indicates how the modified data (the calculated MAC address) is used to encapsulate the data

prior to forwarding it. Dobbins and Wiget are analogous art because they are from the same field

of endeavor of virtual LANs. At the time of the invention it would have been obvious to a

person of ordinary skill in the art to modify Dobbins to create the modified data (calculated

MAC address) of Wiget. The motivation for doing so would have been to provide a scalable and

server-less solution to Virtual Private LAN Segments by using the ME-ARP of Wiget as

suggested in lines 41-43 of column 1. Therefore, it would have been obvious to combine Wiget

with Dobbins for the benefit of providing a scalable and server-less solution to VPLS to obtain

the invention as specified in claim 40.

Regarding claim 2, the above combination of Dobbins and Wiget discloses the limitation

the customer context information added to the resulting data is added in the place of the at least a

part of the layer 2 address information removed in lines 61-65 of column 5 of Wiget.

Regarding claim 3, the above combination of Dobbins and Wiget discloses the limitation

of aggregating the modified data at the logical interface with other modified data at other logical

interfaces, for trunking on a shared, network-facing, communications link is shown in Dobbins in

figure 5, for example, where packets from the same VLAN are aggregated together at the

respective SFPSs; for example, the packets from VLAN 20 arrive on ports 2 and 3 at SFPS 11

and are aggregated and forwarded to SFPS 14.

Regarding claim 4, the above combination of Dobbins and Wiget discloses the limitation

of saving, in association with the logical interface, layer source address information of the data is

disclosed in lines 17-26 of column 6 of Wiget which indicates that the MAC address is stored in

the cache of CPE A and is associated with the logical interface in that it is pulled out of the cache

and inserted in the destination MAC location for that interface.

Regarding claim **5**, the above combination of Dobbins and Wiget discloses the limitation

that at least a portion of the customer context information identifies a unique virtual private

network customer is disclosed in lines 61-65 of column 5 of Wiget.

Regarding claim **8**, the above combination of Dobbins and Wiget discloses the limitation

that at least a portion of the customer context information uniquely identifies the logical interface

in lines 61-65 of Wiget since the VPN is the logical interface.

Regarding claim **9**, the above combination of Dobbins and Wiget discloses the limitation

that at least a portion of the customer context information identifies a class of service level in

lines 26-31 of column 2 of Dobbins.

Regarding claim **10**, the above combination of Dobbins and Wiget discloses the

limitation that at least a portion of the customer context information identifies a quality of

service level in lines 26-31 of column 2 of Dobbins.

Regarding claim **11**, the above combination of Dobbins and Wiget discloses the

limitations that f) receiving the modified data from the shared, network-facing, communications.

link (lines 12-15 of column 5 of Dobbins); and g) encapsulating the modified data with carrier

information, used to forward the modified data across the transport network to a second edge

device with which the second customer device has access (in lines 57-67 of column 5 of Wiget

which indicates how the modified data (the calculated MAC address) is used to encapsulate the

data prior to forwarding it).

Regarding claim **12**, the above combination of Dobbins and Wiget discloses the

limitation that the carrier information includes an address of the second edge device in that the

information is forwarded to the CPE B and thus the encapsulating carrier information must

necessarily include addressing information for this node (see lines 1-26 of column 6, for an example of the data being forwarded to CPE B which is the second edge device).

Regarding claim **13 and 42**, the above combination of Dobbins and Wiget discloses the limitation that the data includes a layer 3 destination address corresponding to a layer 3 address of the second customer device (the end devices have IP addresses that are part of the client or provider address space of the VPLS and thus communications with the end device are via its layer 3 (IP) address), and wherein the address of the second edge device is derived from a layer 3 destination address of the data and at least a part of the customer context information (the IP routing function forwards the data towards the second edge device based on the layer 3 address and thus the edge device address is derived at least in part from layer 3 IP destination address; the VPN Id is also used in this addressing).

Regarding claim **14**, the above combination of Dobbins and Wiget discloses the limitation that the carrier information includes service level information in lines 26-31 of column 2 of Dobbins.

Regarding claim **19**, the above combination of Dobbins and Wiget discloses the limitation that the layer 2 address information of the data is an Ethernet header (see lines 5-9 and 19-22 of column 2 of Dobbins), wherein the customer context information replaces a value in a layer 2 destination address field of the Ethernet header (lines 61-65 of column 5 of Wiget).

Regarding claim **20**, the above combination of Dobbins and Wiget discloses the limitation that the layer 2 address information of the data is an Ethernet header (see lines 5-9 and 19-22 of column 2 of Dobbins), wherein the customer context information replaces a value in a layer 2 destination address field of the Ethernet header (lines 61-65 of column 5 of Wiget), and

wherein a node terminating the shared, network-facing, communications link operates in the

promiscuous mode (this is the case as these nodes are accepting multicast and ARP packets.)

Regarding claim **28**, the above combination of Dobbins and Wiget discloses the

limitation that the carrier information table associates carrier information with a layer 3

destination address and at least a part of customer context information (the end devices have IP

addresses that are part of the client or provider address space of the VPLS and thus

communications with the end device are via its layer 3 (IP) address; the layer 3 address and the

context information are associated with the carrier information in order that all 3 pieces of

information are pulled together to properly format the packet as indicated in Wiget.)

Regarding claim **41**, the above combination of Wiget and Fox discloses the limitation that

the carrier information includes an address of the second edge device (the information is routed

to the end device via the second edge device and thus the layer 3 address information of this

device must be included to properly route the data).

Regarding claim **44**, the above combination of Dobbins and Wiget discloses the

limitation that the first customer has a layer 2 address in the replaced MAC device of lines 61-65

of column 5.

Regarding claim **45**, the above combination of Dobbins and Wiget discloses the

limitation that the first customer has a layer 3 address in the tunnel end-point IP address of lines

61-65 of column 5.

Regarding claim **46**, the above combination of Dobbins and Wiget discloses the

limitation that the first customer device and the second customer device are provided outside of

the edge device of the transport network in figure 5 of Dobbins or figure 1a of Wiget.

9.   Claims **21, 25-26, 31-32, and 35-37,** are rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent 6,640,251 to Wiget in view of RFC 2685 to Fox et al.

        Regarding claim **21,** Wiget discloses the limitation of a machine readable medium (in the

CPEs (11-14) of figure 1) having stored thereon: a) data received from a first customer device

and addressed to a second customer device (the packets sent from the source end system; see

figure 5, for example); and b) customer context information (tunnel end-point IP address and the

VPN Id information of lines 61-65 of column 5) associated with the logical interface (the VPN

itself).

        Wiget does not disclose expressly the limitation that the logical interface is uniquely

associated with the first customer device or the limitation that at least a part of the customer

context information identifies, at least one of (A) the logical interface uniquely, (B) a customer

uniquely, and (C) a service level. RFC 2685 discloses that the VPN Id uniquely identifies the

customer (the VPN-OID – see section 4 on pages 3-4); this discloses both of the above

limitations (the context information is uniquely identified with the customer via the VPN Id and

the context information also identifies the customer uniquely.) Wiget and RFC 2685 are

analogous art because they are from the same field of endeavor Virtual Private Networking. At

the time of the invention it would have been obvious to a person of ordinary skill in the art to

modify Wiget to use the VPN Id as described in RFC 2685. The motivation for doing so would

have been to uniquely identify the customer (VPN authority) with the VPN Id as suggested in

RFC 2685 in the first full paragraph of page 3. Therefore, it would have been obvious to

combine RFC 2685 with Wiget for the benefit of uniquely identify the VPN authority to obtain

the invention as specified in claim 21.

Regarding claim **31**, Wiget discloses a machine readable medium having stored thereon a

customer context-based forwarding table, the customer context-based forwarding table

comprising a plurality of entries, each of the entries including: a) carrier information (contained

in the ARP table of the CPE which contains information to allow the CPE to properly forward a

packet on the proper carrier); and b) at least a part of a layer 3 destination address (the IP address

is clearly part of the ARP entry as indicated in, for example, lines 58-59 of column 3) and at least

a part of customer-based context information (the VPN Id is also clearly part of this entry; this

information is required in order to replace the HW source address as described in lines 61-65 of

column 5).

Wiget does not disclose expressly the limitation that at least a part of customer-based

context information includes information for uniquely identifying a customer, and wherein the

information for uniquely identifying a customer is a VPN-OUI. RFC 2685 discloses these

limitations in the VPN-OID – see section 4 on pages 3-4. Wiget and RFC 2685 are analogous art

because they are from the same field of endeavor Virtual Private Networking. At the time of the

invention it would have been obvious to a person of ordinary skill in the art to modify Wiget to

use the VPN Id as described in RFC 2685. The motivation for doing so would have been to

uniquely identify the customer (VPN authority) with the VPN Id as suggested in RFC 2685 in

the first full paragraph of page 3. Therefore, it would have been obvious to combine RFC 2685

with Wiget for the benefit of uniquely identify the VPN authority to obtain the invention as

specified in claim 31.

Regarding claim **25**, the above combination of Wiget and Fox discloses the limitation that

the machine readable medium further stores carrier information used to forward the data, across

the transport network, to an edge device associated with the second customer device (in lines 57-

67 of column 5 of Wiget which indicates how the modified data (the calculated MAC address) is

used to encapsulate the data prior to forwarding it).

Regarding claim **26**, the above combination of Wiget and Fox discloses the limitation that

the carrier information includes an address of the edge device associated with the second

customer device, and wherein the address of the edge device is based on the address of the

second customer device and at least a part of the customer context information (the IP routing

function forwards the data towards the second edge device based on the layer 3 address and thus

the edge device address is derived at least in part from layer 3 IP destination address; the VPN Id

is also used in this addressing).

Regarding claim **32**, the above combination of Wiget and Fox discloses the limitation that

devices of different customers can have the same layer 3 address, such devices being uniquely

addressable based on at least a part of their layer 3 address and at least a part of customer-based

context information in paragraphs 2-5 of page 2 of Fox.

Regarding claim **35**, the above combination of Wiget and Fox discloses the limitation that at least a part of customer-based context information further includes information for uniquely identifying a host of a given customer in the VPN Index field of section 4 of Fox on pages 3-4.

Regarding claim **36**, the above combination of Wiget and Fox discloses the limitation that the information for uniquely identifying a host of a given customer is a VPN-Index in the VPN Index field of section 4 of Fox on pages 3-4.

Regarding claim **37**, the above combination of Wiget and Fox discloses the limitation of c) a layer 3 address of an egress edge device (the information is routed to the end device via the egress edge device and thus the layer 3 address information of this device must be included to properly route the data).

10. Claims **6-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,147,995 to Dobbins, et at in view of U.S. Patent 6,640,251 to Wiget et al and in further view of RFC 2685 to Fox et al.

Dobbins and Wiget disclose the limitations of parent claim 5 as indicated in the above rejection under 35 U.S.C. 103(a). However, the combination of Dobbins and Wiget does not disclose expressly the limitations of claims 6 and 7.

Fox discloses the limitation of claim 6 that at least a portion of the customer context information identifies a unique host of the unique virtual private network in the VPN Index field of section 4 of Fox on pages 3-4. Fox further discloses the limitation of claim 7 that at least a portion of the customer context information uniquely identifies the logical interface within a given virtual private network customer in the VPN Index field of section 4 of Fox on pages 3-4.

Wiget and RFC 2685 are analogous art because they are from the same field of endeavor

Virtual Private Networking. At the time of the invention it would have been obvious to a person

of ordinary skill in the art to modify Wiget to use the VPN Id as described in RFC 2685. The

motivation for doing so would have been to uniquely identify the customer (VPN authority) with

the VPN Id as suggested in RFC 2685 in the first full paragraph of page 3. Therefore, it would

have been obvious to combine RFC 2685 with Wiget for the benefit of uniquely identify the

VPN authority to obtain the invention as specified in claims 6 and 7.

Allowable Subject Matter

11.   Claims **15-18 and 29-30** are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

- U.S. Patent 6,256,314 to Rodrig et al discloses a method for routerless layer 3 forwarding
  in a network.

- U.S. Patent 6,304,901 to McCloghrie et al discloses a multiple VLAN architecture
  system.

- U.S. Patent 6,154,839 to Arrow et al discloses a method for translating packet addresses
  based upon a user identifier.

- U.S. Patent Application Publication 2002/0027906 to Athreya et al discloses a system for connecting geographically virtual local area networks.

- U.S. Patent 6,553,029 to Alexander discloses a method for link aggregation in Ethernet frame switches.

- U.S. Patent 5,946,313 to Allan et al discloses a mechanism for multiplexing ATM AAL 5 virtual circuits over Ethernet.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 6:30-5:00 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCS 9-21-06

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